A HIGH THROUGHPUT BIOLOGICAL HEART RATE MONITOR THAT IS MOLECULARLY DETERMINED

ABSTRACT OF THE DISCLOSURE

This invention provides for a chamber and system designed for use in assaying drug effects on heart rate. The chamber consists of a series of wells, each 3mm by 3mm in inner diameter. Cardiac myocytes disaggregated from neonatal animals are plated onto the bottom of each well and grown under standard tissue culture conditions. The chamber holds from 24-96 such wells. When drugs are to be assayed, the cells in each well are loaded with a calcium sensitive dye and the beating rate in each is monitored with a photodiode. Drug is added in graded concentrations to each well, and equilibrated and effects on rate are observed. This construct permits use of a cell based bioassay for the study of drugs or agents that may alter cardiac rate. This invention can be used in high throughput screening of drugs to evaluate/predict their effects on cardiac rate and rhythm. Further provided for by this invention is a A vector which comprises a compound which encode an ion channel.